

GEL'FENBEIN, S. Kh.

Author: Gel'fenbein, S. Kh.

Title: The Gas Turbine in domestic industry. (Gasovye turbiny; bibliografiia. 23 p.

City: Moscow

Publisher:

Printers: State Printing House of the Machine Construction Literature.

Date: 1946

Available: Library of Congress

Source: Monthly List of Russian Accessions, V. 3, No. 12, March 1951

GEL'FENBEIN, S. KH.

Gazovaia turbina v domennom proizvodstve. Moskva, Mashgiz, 1946. 29, (3) p. illus.

The gas turbine in blast-furnace production.

DLC: TN673.G4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library  
of Congress, 1953.

GEL'FENBEYN, 6. KH

Aug 1947

USER/Engineering  
Turbines, Gas  
Turbines - Combustion

Experimental Research and Complex Gas Turbine Plant  
with Constant Pressure Combustion, C. Kh. Gel'fen-  
bein, Candidate in Technical Sciences, Central Sci-  
entific Research Boiler Turbine Institute 1947  
I. I. Polunov, 1 p

"Kotloturbostroyeniye" No 4

A brief preliminary report on the outcome of experi-  
mental research done at the Laboratory of Gas Tur-  
bines TGTI on gas turbine plants (p-constant),  
carried out in the simplest plan with high-speed  
24926

Aug 1947

USER/Engineering (Contd.)

A brief preliminary report on the outcome of experi-  
mental research done at the Laboratory of Gas Tur-  
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carried out in the simplest plan with high-speed  
24926

24926

GEL'FENBEIN, S. M.

Effect of nitration of sulfurous sulfuric acid mixture on the heat of formation of sulfurous acids. M. S. Gel'fenbein, *Zhur. Org. Khim.* 1960, 6, 1003-10.

Author: (1) Applied Chem. Inst., Novosibirsk; (2) Institute of Chemical Polymers, Politech. Inst., Novosibirsk.

22-1. PRELIMINARY. The heat of reaction  $Q$  of  $\text{HNO}_3$  with  $\text{H}_2\text{SO}_4$  decreases with increasing dilution. If  $Q$  of the pure acids is taken as 1, the heat evolved in the interaction of the acids taken in the same proportions, but dilut. with  $\text{H}_2\text{O}$ , is a fraction of  $Q$  of the pure acids; the decrease of  $Q$  with increasing  $\text{H}_2\text{O}$  content of the mixt. is nearly linear. In terms of the proportions of  $\text{HNO}_3$  and  $\text{H}_2\text{SO}_4$  in the undilut. mixt.,  $Q$  passes through a max. (at about 67 wt. %  $\text{H}_2\text{SO}_4$ ). The 3 plots permit calcn. of  $Q$  for any mixt. at any diln. The accepted representation of the reaction is  $\text{HNO}_3 + \text{H}_2\text{SO}_4 = \text{NO}_2 + \text{HSO}_4^- + \text{H}_2\text{O}$ . This scheme accounts for the high exch. of the mixt. of the undil. acids, and (in contrast to the behavior of the single acids) its fall with increasing diln., which shifts the equil. to the left and thus decreases the concn. of  $\text{NO}_2$ . This effect accounts also for the decrease of  $Q$  with increasing diln. In contrast calcn. of heats of nitration, two factors, not usually taken into consideration, should be allowed for. One is the heat of  $\text{aq. HNO}_3$  and  $\text{H}_2\text{SO}_4$  in the nitration mixt.; this is equal to the heat of nitration, with reversed sign. The other factor is the heat of diln. (not of the single  $\text{H}_2\text{SO}_4$  or of the  $\text{H}_2\text{SO}_4 + \text{HNO}_3$  mixt. (with 20-40% excess  $\text{HNO}_3$ ) commonly used in nitration; this heat of diln. of the mixt. of acids can be evaluated from the difference of the heat of formation of the aq. mixt. and the heat of mixture of the undil. acids. As examples, detailed calcns. are given of heats of nitration of diln. (with 1 ton of glycerol, and 5000 kg. of acid ( $\text{HNO}_3$  50,  $\text{H}_2\text{SO}_4$  50%)), the resulting acid is composed of  $\text{HNO}_3$  7.45,  $\text{H}_2\text{SO}_4$  25.5,  $\text{H}_2\text{O}$  67.55 kilomoles; the total heat evolved is 251,668 kcal. as against 347,000 kcal. calcd. by the usual procedure, i.e. 52% too high. Similarly, for the nitration of  $\text{PhOH}$ , the conventional method gives a heat by 31% too high. The discrepancy becomes even more serious (80% for glycerol, 39% for  $\text{PhOH}$ ) if experimentally determined heats of diln. are taken instead of the data of McDavid (C. 16, 3773). The new expd. data, give (g. mixt., initial compn. in %  $\text{HNO}_3$ ,  $\text{H}_2\text{SO}_4$ ,  $\text{H}_2\text{O}$ ,  $\text{H}_2\text{O}$  added, final compn. in %  $\text{HNO}_3$ ,  $\text{HSO}_4$ ,  $\text{H}_2\text{O}$ , heat of diln. in cal.): 450.0 15.2 85.1 7 2.1; 14.4 80.75 4.88 47.3 14.4 80.75 4.85 3.7 13.4; 75.35 11.25 495.51.05 13.4 75.35 11.25 2.94 12.70; 70.85 16.45 228.50.0 2.52 88.98 8.8 3.5 2.3 82.9; 14.8 516.43.0 9.18 84.38 6.24 2.7 8.4 80.1, 11.5 308. N. Thom.

GYL'FENBEYN, S. Kh., kand. tekhn. nauk

Alternating working conditions of a gas turbine. Sudostroenie  
no. 7:23-29 J1 '60. (MIRA 1327)  
(Marine gas turbines)

S/262/62/000/008/010/022  
I007/I207

AUTHOR: Gel'fenbeyn, S. Kh.

TITLE: Method of computing variable operating conditions for marine gas turbines

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustavovki, no. 8, 1962, 35, abstract 42.8.182. "Tr. Tsentr. n.-i. in-ta morsk. flota", no. 34, 1961, 24-38

TEXT: It is shown that operation of the compressor is approximately proportional to the square of its rotational speed. A formula is derived for computing the relationship between gas consumption and rotational speed of the turbine driving the compressor in the single-shaft and double-shaft gas turbine unit. The formula was obtained analytically utilizing empirical relationships.

[Abstracter's note: Complete translation.]

Card 1/1

GEL'FENBEYN, S.Kh., kand.tekhn.nauk

Rules of the U.S.S.R. Register on marine gas turbine plants.  
Sudostroenie 28 no.3:21-23 Mr '62. (MIRA 15:4)  
(Marine gas turbines) (Ship registers)

GEL'FENBEYN, S.Kh., kand.tekhn.nauk, dotsent

Calculation of the regenerator of a gas turbine system for opera-  
tion on principal parameters and partial load conditions. Energo-  
mashinostroenie 9 no.11:25-29 N '63. (MIRA 17:2)

L 11230-63  
ACCESSION NR: AP3001476

EPA/EWT(m)/BDS--AEDC/AFFTC/ASD--Paa-4  
S/0114/63/000/006/0037/0038

57

AUTHOR: Gel'fembeyn, S. Kh. (Candidate of technical sciences)

TITLE: Testing the gas turbine with a free-piston gas producer

13

SOURCE: Energomashinostroyeniye, no. 6, 1963, 37-38

TOPIC TAGS: gas turbine, free-piston gas producer, "Pavlin Vinogradov" ship

ABSTRACT: Results are reported of testing in 1961 a six-stage gas turbine and its free-piston gas producer as a main propulsion plant on the "Pavlin Vinogradov" ship. The tests were carried out under mooring, ballast, and cargo conditions. The turbine plant was built by the "Sigma" Company. The techniques and results of measurements are reported in detail. The turbine efficiency (under ballast conditions) in the power range 34-100 per cent, or rpm range 74-100 per cent, varied within 9 per cent. In stand tests the efficiency varied little within 23.5-100 per cent power, or 62-100 per cent rpm. Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00  
SUB CODE: 00  
Card 1/1 ch/wm

DATE ACQD: 01Jul63  
NO REF SOV: 002

ENCL: 00  
OTHER: 000

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000514620013-9

GEMENDEBEYK, S.RO., kand.tekhn.neruk, docent

Heat exchangers for closed-cycle type gas turbine plants.  
Energomashinostroenie 11 no.3:20-33 Ag 1965.

(MIRA 1240)

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000514620013-9"

DUBROVSKIY, A.A., kand. tekhn.nauk; GEL'FENBEYN, S.P., inzh.

Using negative feedback for improving the efficiency of machinery.  
Mekh. i elek. sots. sel'khoz. 19 no.3:30-32'61. (MIRA 4:6)

1. Vesescyuznyy nauchno-issledovatel'skiy institut mekhanizatsii  
sel'skogo khozyaystva.  
(Agricultural machinery)

DUBROVSKIY, A. A., kand. tekhn. nauk; GEL'FENBEYN, S. P., inzh.

Some problems concerning the automation of mobile agricultural  
machines. Mekhn. i elek. sots. sel'khoz. 20 no.6:21-25 '62.  
(MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii  
sel'skogo khozyaystva.

(Automation) (Farm mechanization)

CEL'FENBEYN, S.P., kand. tekhn. nauk; SVIRSHCHEVSKIY, A.V., kand. tekhn. nauk

Conference on the Automation of Agriculture. Mekh. i elek. sots.  
sel'khoz. 21 no.5:36,58 '63. (MIRA 17:1)

GEL'FENBEYN, YA. V.

PA 15/49772

USSR/Engineering  
Pumps, Plunger  
Machines, Testing

Aug 48

"Mechanical Pressure Testing of Boilers, Pipes and  
Armatures," Ya. V. Gel'fenbeyn, Engr, 1/2 P

"Mekh Stroi" No 8

Describes test pump produced by Glavpromenergosmontazh  
Plant in Leningrad. It is horizontal plunger type,  
driven by an electric motor through worm reduction  
gearing. Maximum pressure 150 ats.

15/49772

GEL'FENBEYN, Ya. V.

20657 Gel'fenbeyn, Ya. V. Mekhanizatsiya priteski i Rozki Kirpicha. Mekhanizatsiya  
stroit-va, 1949, No. 6, s. 22-23

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000514620013-9

GEL'FENBEYN, Ya. V., Eng.

Devices used for installation work on boiler units and plant pipe lines.  
Rab. energ., 1, No 2, 1951.

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R000514620013-9"

*F. N. Gel'fenbeyn Ya. V.*

AID P - 4062

Subject : USSR/Power

Card 1/1 Pub. 26 - 20/33

Authors : Alekseyev, N. V. and Ya. V. Gel'fenbeyn, Engs.

Title : Applying plastering solutions without using a compressor.

Periodical : Elek. sta., 12, 49-50, 1955

Abstract : Various methods of applying plaster without using a compressor but depending upon the size and quality of sand used are explained. Three diagrams.

Institution : None

Submitted : No date

GEL'FENBEYN, Ya.V., inzh.

Inflated temporary structures for the construction of thermal electric plants. Energ. stroi. no.22:24-25 '61. (MIRA 15:7)

1. Proyektchnaya tresta "Sevenergoproekt".  
(Buildings, Portable) (Electric power plants)

GEL'FENBEYN, Ya.V., inzh.

New truck-mounted cranes abroad. Stroi. 1 dor. mash. 8 no.5:  
33-35 My '63. (MIRA 16:5)  
(Cranes, derricks, etc.)

GEL'FENBEYN, Ya.V., inzh.

Installing tracks for gantry cranes. Prom. stroi. 40 [i.e. 41],  
no. 5:47-48 My '63. (MIRA 16:5)  
(Cranes, derricks, etc.)

GEL'FENBEYN, Ya.V., irzh.

Crawler and automobile cranes in foreign countries. Stroi. i  
dor. mash. 9 no.9:34-38 S '64. (MIRA 17:11)

GEI'FAND REYN, Y. S. (R3, R4)

Determination of the dynamic characteristics of a closed-loop  
nonstationary system in normal operation. Izv. AN SSSR. Tekh.  
kib. no. 4:111-114 J1-wg '65. (MIRA 18:11)

GEL'FENBEYN, Ya.V., inzh.

Need for the publishing of a "Manual on the preparation of organization plans for the construction of thermal electric power plants." Energ.stroi. no.25:94-96 '61. (MIRA 15:4)  
(Electric power plants--Design and construction)

GEL'FENBEYN, Yakov Vladimirovich; VINITSKIY, D.Ya., inzh., retsenzent;  
EBERLIN, L.A., inzh., retsenzent; PAVLOV, N.G., red.;  
ZHITNIKOVA, O.S., tekhn. red.

[Hoisting mechanisms and rigging devices for the construction  
of thermal electric power plants]Gruzopod"emrye mekhanizmy i  
takelazhnye prispособleniya dlja stroitel'stva teplovых  
elektrostantsii. Moskva, Gosenergoizdat, 1962. 270 p.  
(MIRA 15:9)

1. Moskovskiy filial Vsesoyuznogo instituta po proyektirovaniyu  
organizatsiy energeticheskogo stroitel'stva (for  
Vinitskiy, Eberlin).

(Hoisting machinery)  
(Electric power plants--Design and construction)

BYKOV, V.A.; GEL'FENBEYN, Ye.Yu.; PILIP, M.M.

New design of rope transfer and racking arrangements.  
Prokat. proizv. no. 2:111-117 '60. (MIRA 14:11)  
(Rolling mills--Equipment and supplies)

DUNAYEV, V.I.; GEL'FENBEYN, Ye.Yu.

Removal of the finished product from plate mills. Prokat.  
proizv. no.2:118-125 '60. (MIRA 14:11)  
(Rolling mills—Equipment and supplies)

GRABOVSKIY, L.K., inzh.; BASHILOV, G.N., inzh.; SOKOLOVSKIY, O.P., inzh.;  
KRASNOSEL'SKIKH, S.N., inzh.; ANTONOV, P.A.; BYKOV, V.A., inzh.;  
DANILOV, G.G., inzh.; GEL'FENBEYN, Ye.Yu., inzh.; PILIP, M.M.,  
inzh.; MAKAROV, B.V., inzh.; RAGINSKY, D.M., inzh.

Equipment of a working line of hot rolling mills. Sbor. st.  
NIITIAZHMASHa Uralmashzavoda no.6:70-96 '65.

(MIRA 18:11)

GEL'FENBOYM, Moisey Shlemovich, KOLCHANSKAYA, N.A., red.;  
MAMONTOVA, N.N., tekhn. red.

[Guide for the buyer of photographic supplies and photographic chemicals] Pokupatel'iu o fotomaterialakh i foto-khimikatakh. Moskva, Gostrogizdat, 1961. 81 p.  
(MIRA 15:7)  
(Photography--Equipment and supplies)

VARFOLOMEYEV, F.G.; GEL'FENBOYM, M.Sh.; KOTOVICH, Yu.V.;  
OSTANOVSKIY, T.S.; SEMENETS, V.M.; SHIROKOVA, Ye.A.;  
EYGINSON, Ye.N.; VVEDENSKIY, S.F., red.; SINEL'NIKOVA,  
TS.B., red.; TSESARKIN, L.D., red.

[Study of goods serving cultural needs] Tovarovedenie  
kul'ttovarov. [By] F.G.Varfolomeev i dr. Moskva, Izd-vo  
Ekonomika, 1964. 471 p. (MIRA 17:5)

GEL'FENSHTEYN, A.B.

Evaluation of the performance of the modern beer rectification  
columns with continuous action. Spirit.prom. 29 no.4:36-38 '63.  
(MIRA 16:5)

1. Karabaltinskiy spirtovoy zavod.  
(Distilling apparatus)

GEL'FENSHTEYN, A.B.; YERMOLENKO, R.T.

Karabalty Distillery is an enterprise of communist labor. Perm.  
i spirt.prom. 30 no.8:1-3 '64. (MIRA 18:1)

OBEL'FER, A.P.

U-shaped pancreatocystojejunostomy in pancreatic cyst caused by  
injury. Khirurgiia no.10:88 O '55. (MIRA 9:2)

1. Iz khirurgicheskogo otdeleniya 3-y gorodskoy bol'nitsy Kiyeva.  
(PANCREAS--TUMORS) (CYSTS)

GEL'FER, A.P., starshiy ordinator (Kiyev)

Phlegmon of the gastrointestinal tract. Vrach.delo no.5:505-509  
My '57. (MLRA 10:8)

1. Khirurgicheskoye otdeleniye (nachal'nik - kandidat meditsinskikh  
nauk D.N.Dumbadze) Bol'ničny No.2 Yugo-zapadnoy zheleznoy dorogi  
(ALIMENTARY CANAL--DISEASES)

L 27581-66 ENT(1)/T RO/JK  
ACC NR: AP6018376

SOURCE CODE: UR/0219/65/059/005/0067/0071

AUTHOR: Gel'fer, A. P.

ORG: Surgery Section /headed by Candidate of medical sciences D. N. Dushchadze, Railroad Hospital No. 2, South-Western Railroad (Khirurgicheskoye otdeleniye Donskoy bol'nitsy No. 2 Yugo-zapadnoy zheleznoy dorogi); Toxicology Laboratory /headed by Doctor of medical sciences Iu. S. Kogan, Kiev Institute of Labor Hygiene and Occupational Diseases (Toksikologicheskaya laboratoriya Kiyevskogo instituta gigienny truda i profzabolevaniy)

TITLE: Experimental data on the effect of a number of organophosphorus compounds on the motility of the rabbit intestine

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 59, no. 5, 1965, 67-71

TOPIC TAGS: organic phosphorus compound, rabbit, digestive system, pharmacology, muscle physiology

ABSTRACT: The effect of organophosphorus compounds on the motility of the rabbit intestine was investigated *in situ* upon intramuscular or intravenous injection of the compounds. The action of compounds of the following three groups was investigated: 1) those with a cholinesterase inhibitor action both *in vitro* and *in vivo*, i.e., pyrophos (I), isosystox (II), and methylacetophos (III); 2) compounds which exhibit a relatively weak cholinesterase inhibitor effect *in vitro*, but are transformed into substances with a strong

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ACC NR: AP6018376

anticholinesterase activity in vivo - i.e., octamethyl (IV), chlorophos (V), M-81 (VI), and M-81 Su 3 (VII); 3) K-20-35 (VIII), a substance which does not exert a cholinesterase inhibitor effect either in vitro or in vivo. Acetophos (IX) was also investigated. The action of the compounds on the motility of the intestine, expressed in ratios of increase of the amplitude of contractions of longitudinal muscle fibers to that of contractions of transverse muscle fibers, was as follows: I, 3:1.6; II, 2.5:3; III, 2.5:2.7; IV, 4.8:1.3; V, 5.1:4.8; VI, 4.5:2.5; VII, 4.6:2.2; VIII, 0:0; IX, 2:2.3. The increase in peristalsis was greatest when the induced contraction of longitudinal muscles exceeded that of transverse muscles to the greatest extent. Derivatives of pyrophosphoric acid (I, IV), esters of dithiophosphoric acid (VI, VII), and V (an ester of phosphinic acid) acted predominantly on longitudinal muscles, while esters of thiophosphoric acid (II, III, IX) had a greater effect on transverse vs. longitudinal muscles. III, VI, and VII increased the motility of the intestine in doses in which they produced only a weak anticholinesterase effect. Injection of III or IX after the motility of the intestine had been inhibited by a cholinolytic (atropine or tropacine) induced new contraction waves. This paper was presented by Active Member, AMN SSSR, A. I. Cherkas. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 06 / SUBM DATE: 18Dec63 / ORIG REF: 010 / OTH REF: 002

Card 2/2 CC

ACC NR: AP60290.1

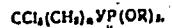
SOURCE CODE: UR/0413/66/000/014/0024/0024

INVENTOR: Sanin, P. I.; Shepeleva, Ye. S.; Borodach, M. S.; Myannik, A. O.;  
Kagan, Yu. S.; Gel'fer, A. P.; Paykin, D. M.; Gamper, N. M.

ORG: none

TITLE: Preparation of esters of phosphoric and thiophosphoric acids. Class 12,  
No. 183751 [announced by Institute of Petrochemical Synthesis, AN SSSR (Institut  
neftekhimicheskogo sinteza AN SSSR)]

SOURCE: Izobret prom obraz tav zn, no. 14, 1966, 24

TOPIC TAGS: insecticide, chloroalkyl phosphate, chloroalkyl thiophosphate, ester,  
phosphoric acidABSTRACT: In the proposed method for the preparation of herbicides, the phos-  
phoric and thiophosphoric esters of the general formula:

X

(where X and Y are O or S; n = 1, 4, 6, 8; and R is an alkyl) are  
obtained by the reaction of trichloroalkyl alcohols with tetrachloro-  
alkanes [sic]. [WA-50; CBE No. 11]

SUB CODE: 07/ SUBM DATE: 21Jun65/

UDC: 547.26'118.07

Card 1/1

GEL'FER, A.P. [Hel'fer, A.P.]

Effect of some phosphorus organic compounds on the motor activity  
of the intestine. Fiziol. zhur. [Ukr.] 7 no.2:243-250 Mr-lyp '61.  
(MIRA 14:4)

1. Toxicological Laboratory of the Kiev Institute of Labor Hygiene  
and Occupational Diseases and the Surgical Division of Southwest  
Railway Hospital No.2.

(INTESTINES MOTILITY) (PHOSPHORUS ORGANIC COMPOUNDS)

GEL'FER, A.P.

Experimental data on the effect of a series of organophosphorus compounds on the motor function of the intestines in rabbits.  
Biul.eksp.biol. i med. 59 no.5:67-71 '65.

(MIRA 18:11)

1. Khirurgicheskoye otdeleniye (nachal'nik - kand.med.nauk D.N.Dumbadze) Dorozhnoy bol'nitey No.2 Yugo-zapadnoy zheleznoy dorogi i toksikologicheskaya laboratoriya (zav. - dok'tor med. nauk Yu.S.Kagan) Kiyevskogo instituta gigiyeny truda i professional'nykh zabolеваний. Submitted December 18, 1963.

SASS, A.Ya. ~~et al.~~ B.Ya., redaktor; YUZHNAYA, Ye.A., redaktor  
Izdatel'stvo; SOSNIN, A.P., tekhnicheskiy redaktor

[SMD-2 peat-spreading machine] Stilochnaia mashina SMD-2.  
Moskva, Gos. izd-vo mestnoi promyshl. RSFSR, 1956.

135 p.

(Peat machinery)

(MLRA 10:4)

88428

S/056/60/039/006/015/063  
B006/B056

24.6900

AUTHORS: Vovchenko, V. G., Gel'fer, G., Kuznetsov, A. S.,  
Meshcheryakov, M. G., Svyatkovskiy, V.

TITLE: Effect of Nuclear Binding of Nucleons Upon the Shape of  
Pion Energy Spectra

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,  
Vol. 39, No. 6(12), pp. 1557-1570

TEXT: A description is given of experiments which were carried out  
with the aim of obtaining quantitative data on the effect produced by  
nucleon bindings in deuterons and carbon nuclei upon the production of  
charged pions. Conclusions are drawn with respect to pion production  
processes on the basis of comparisons of the energy spectra of pions  
produced in collisions of protons with free protons and with nucleons  
bound in deuterons and carbon nuclei. The experiments were conducted  
in a way ensuring strictly equal conditions in taking the spectra and  
separating the pp- and pn-collisions. The experiments were carried out  
on the six-meter synchrocyclotron of the Joint Institute of Nuclear

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88428

Effect of Nuclear Binding of Nucleons  
Upon the Shape of Pion Energy SpectraS/056/60/039/006/015/063  
B006/B056

Research. For the pp- and pd-collision experiments, thin-walled cylindrical vessels (4 cm x 12 cm) filled with liquid hydrogen and deuterium, respectively, were used as targets. The densities were 0.0708 and 0.169 g/cm<sup>3</sup>, respectively. In the experiments with carbon a 3 mm thick, 5 x 5 cm<sup>2</sup> graphite plate was used as target. In the target center, the proton energy in all cases was (654±5) Mev, the slowing-down losses in hydrogen and deuterium, respectively, were 1.4 and 1.7 Mev, and in carbon they were 1.9 Mev; the slowing-down losses of the 150-Mev pions were 0.7, 0.8, and 0.5 Mev, respectively. The proton flux in a beam of 2 x 3 cm<sup>2</sup> cross section was 2·10<sup>8</sup> p/cm<sup>2</sup>·sec. The energy spectra of the charged pions were measured by a magnetic spectrometer with two thin scintillation counters at the input, which was described by L. S. Azhgirey et al. The pion recording threshold was about 35 Mev. The results obtained had, after a number of corrections, which had an error of 7% for the differential cross sections  $d^2\sigma/d\omega dE$ . The differential elastic pp scattering cross sections at 654 Mev and for 56° in the laboratory system (l.s.) were taken to be  $(6.7 \pm 0.35) \cdot 10^{-27}$  cm<sup>2</sup>/steradian, so that for 120° in c.m.s. the value  $(3.41 \pm 0.13) \cdot 10^{-27}$  cm<sup>2</sup>/steradian was obtained. The

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Effect of Nuclear Binding of Nucleons  
Upon the Shape of Pion Energy Spectra

S/056/60/039/006/015/063  
B006/B056

difference found to exist in the spectra of mesons from deuterium and carbon is said to be due to the following reasons: a) a higher degree of pair correlation of the nucleons in the carbon nuclei than in deuterons, b) differences in nucleon momentum distribution in these nuclei, and c) effect of secondary pion-nucleon interactions in carbon nuclei. For an angle of  $\sim 90^\circ$  in the c.m.s. of the two colliding nucleons, the following ratio of differential cross sections was found:

$$\frac{d\sigma}{d\omega} [p + p \rightarrow \pi^+]_H : \frac{d\sigma}{d\omega} [p + p \rightarrow \pi^+]_D : \frac{d\sigma}{d\omega} [p + p \rightarrow \pi^+]_C = 1:0.79:0.40.$$

The  $\pi^-$ -meson yields from deuterium and carbon per nucleon of the target nucleus were found to be approximately the same. The  $\pi^+ - \pi^-$ -meson yield ratios for deuterium and carbon were found to be  $10.3 \pm 1.3$  and  $6.0 \pm 0.8$ . The decrease of this ratio on the transition from deuterium to carbon is explained by the considerable fraction of secondary exchange interaction ( $\pi^0 + n \rightarrow \pi^- + p$ ) in the  $\pi^-$ -meson yield of carbon. B. S. Neganov, O. V. Savchenko, A. G. Meshkovskiy, Yu. D. Prokoshkin, L. B. Parfenov, and M. S. Kozodayev are mentioned. There are 4 figures, V

Card 3/6

68428

Effect of Nuclear Binding of Nucleons  
Upon the Shape of Pion Energy Spectra

S/056/60/039/006/015/063  
B006/B056

3 tables, and 31 references: 14 Soviet, 14 US, 1 CERN, and 2 British.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy  
(Joint Institute of Nuclear Research)

SUBMITTED: July 9, 1960

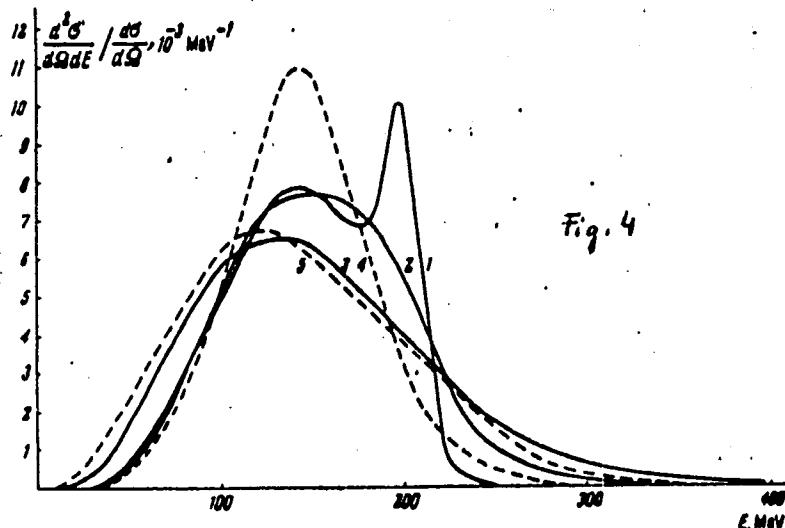
Text to Fig. 4 : Comparison between the energy spectra of the charged pions 1)  $\pi^+$ -mesons, emitted in free pp collisions. 2)  $\pi^+$  from  $[pp]_D$ ; 3)  $\pi^+$  from  $[pp]_C$ ; 4)  $\pi^-$  from  $[pn]_D$ ; 5)  $\pi^-$  from  $[pn]_C$ . All spectra are normalized on a uniform area.

Text to Table 1: Differential cross sections for charged pions in pp- pd- and pC-collisions at 654 Mev. Angle of observation  $56^\circ$  with respect to the proton beam ( $\sim 90^\circ$  in the c.m.s.). 1) Differential cross sections, in  $10^{-28} \text{ cm}^2/\text{steradian}$ ; 2) Process; 3) Nucleons; 4) l.s.; 5) c.m.s.

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B 006/B056

Процесс 2	1 Дифференциальные сечения, $10^{-n} \text{ см}^2/\text{сторад}$			
	$\frac{\partial \sigma}{\partial \omega}, 56^\circ (\text{а.с.})$	$\frac{\partial \sigma}{\partial \omega}, 56^\circ (\text{а.с.})$	$\frac{\partial \sigma}{\partial \omega}, \sim 45^\circ (\text{с.н.н.})$	$\frac{\partial \sigma}{\partial \omega}, \sim 30^\circ (\text{с.н.н.})$
$p+p \rightarrow \pi^+ + \text{и нуклоны}$ 3	$10,2 \pm 1,0$	—	$6,7 \pm 0,7$	—
$p+d \rightarrow \pi^+ + \text{и нуклоны}$ 3	$9,1 \pm 0,9$	$0,88 \pm 0,12$	$5,9 \pm 0,6$	$0,57 \pm 0,08$
$p+C \rightarrow \pi^+ + \text{и нуклоны}$ 3	$30,2 \pm 3,0$	$5,0 \pm 0,8$	$19,5 \pm 1,9$	$3,2 \pm 0,5$

Таб. 1

Card 6/6

GEL'FER, G.A.

Essential hypotension; its distribution and clinical course. Ter. arkh.,  
Moskva 24 no.4:53-60 July-Aug 1952. (CLML 23:2)

1. Of the Department of Propedsutics of Internal Diseases (Director --  
Prof. K. G. Nikulin), Gor'kiy Medical Institute imeni S. M. Kirov.

GEL'FER, G.A., dozent

Remote results of treating hypertension with prolonged sleep. Terap.  
arkh. 26 no.5:29-33 8-0 '54. (MLRA 8:2)

1. Iz propedevticheskoy terapevicheskoy kliniki (dir. prof. K.G.  
Nikulin) Gor'kovskogo meditsinskogo instituta imeni S.M.Kirova  
(SLEEP, therapeutic use,  
hypertension, results)  
(HYPERTENSION, therapy,  
sleep, results)

GEL'FER, G.A. (Gor'kiy)

Unconditioned vascular reactions in hypertension and their dynamics  
in sleep therapy. Klin. med. 32 no.6:60-66 Je '54. (MLRA 7:8)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav.-prof. K.G.  
Nikulina) Gor'kovskogo meditsinskogo instituta.

(HYPERTENSION, therapy.

\*sleep ther., eff. on unconditioned vasc. reactions)

(BLOODVESSELS

\*hypertension, unconditioned reflexes, eff. of sleep ther.)

(SLEEP, therapeutic use

\*hypertension, eff. on unconditioned reflexes of blood  
vessels)

PHASE I BOOK EXPLOITATION

SOV/4948

Gel'fer, Gesel' Ayzikovich, Aleksandr Vladimirovich Ivanov, and Yakov Grigor'yevich Medvedev

Vzryvozashchishchennoye elektrooborudovaniye: spravochik dlya rabotnikov neftepererabatyvayushchey i gazovoy promyshlennosti (Explosionproof Electrical Equipment: Manual for Oil-Refinery and Gas-Industry Workers) Leningrad, Gosoptekhizdat, 1960. 328 p. Errata slip inserted. 4,100 copies printed.

Ed.: V. Ye. Ul'yashchenko; Tech. Ed.: P. S. Frumkin; Executive Ed.: P. S. Dolmatov.

PURPOSE: This manual is intended for engineers and technicians working in oil refineries and in the gas industry, and may be useful to personnel in other industries where the hazard of gas or dust explosion exists.

COVERAGE: The manual contains the specification and description of explosionproof electric machines, apparatus, and devices manufactured by Soviet industry. Data on classification of locations by the degree of

Card 1/13

Explosionproof Electrical Equipment (Cont.)

SOV/4948

explosion hazard, classification of explosive mixtures, selection and use of explosionproof equipment, and arrangement of electric networks in locations containing explosive substances are discussed. It is stated in the foreword that this manual is the first attempt to present in a systematic way data relating to explosionproof electrical equipment and its use. It is based on the Soviet "Rules for the Arrangement of Electrical Installations," 1957-1958 edition, the directives and instructions of the former Ministry of Petroleum and Chemical Industries, USSR, and various scientific research and planning institutes, and information from manufacturing plants. The manual uses the terms vzryvozashchishchenny (protected against explosion), vzryvobezopasny (explosion-safe) and vzryvoneproniayemy (impene- trable to explosion) but does not make clear what difference in meaning, if any, exists. All three terms are hereafter translated as "explosionproof." No personalities are mentioned. There are 22 references, all Soviet.

Card 2/13

GEL'FER, G.A., dotsent

Diagnostic value of electrophoretic determination of blood  
protein fractions in stenocardia. Terap.arkh. 32 no.12:42-47  
'60. (MIRA 14:2)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof.  
K.G. Nikulin) Gor'kovskogo meditsinskogo instituta imeni  
S.M. Kirova.  
(BLOOD PROTEINS) (ANGINA PECTORIS)

BOLDIN, K.M. (Yaroslavl'); DROZDOVA, Z.S.; LEVIN, R.I.; VAYSMAN, L.A.  
(Kuybyshev-obl.); PODOSINOVSKIY, V.V.(Kazan'); SAYFULLINA, Kh.M.  
(Kazan'); EUSYGIN, N.V.(Kazan'); RAZUMOVSKIY, Yu.K.(Leninogorsk);  
GEL'FER, G.A., dotsent (Gor'kiy); MAMISH, M.G.(Kazan'); RAFALOVICH,  
M.B., dotsent; MEL'NICHUK, S.P., kand.med.nauk; KRAPIVIN, B.V.;  
STAROVEROV, A.T. (Saratov); SURIN, V.M.; POROSENKOV, V.S.(Romodanovo,  
Mordovskoy ASSR); ANDROSOV, M.D.(Moskva); ZARIPOV, Z.A.(Urussu,  
Tatarskoy ASSR); MURAV'YEV, M.F.(Izhevsk); KUZ'MIN, V.I.(Batyrevo,  
Chuvashskoy ASSR); SITDYKOV, E.N.(Kazan'); YUDIN, Ya.B.(Novokuznetsk)

Short reports. Kaz.med.zhur. no.4:81-91 J1-Ag '62. (MIRA 15:8)  
(MEDICINE--ABSTRACTS)

KSENZ, S.P.; GRUNICHEV, A.S., kand. tekhn. nauk, retsenzent;  
KRASNOV, I.F., kand. tekhn. nauk, retsenzent; GEL'FER, I.N.,  
red.; KOCHETKOVA, N.A., red.

[Searching for faults in radioelectronic systems using a  
functional test method] Poisk neispravnostei v radioelektron-  
nykh sistemakh metodom funktsional'nykh prob. Moskva, Sovet-  
skoe radio, 1965. 135 p. (MIRA 18:4)

AUTHOR: Gel'fer, L.M., Engineer SOV/117-58-11-8/36

TITLE: An Accelerated Cross Motion on a Turret Lathe (Uskorennaya poperechnaya podacha na revol'vernom stanke).

PERIODICAL: Mashinostroitel', 1958, Nr 11, p 10 (USSR)

ABSTRACT: In the Khar'kovskiy elektromekhanicheskiy zavod imeni Stalina (Khar'kov Electromechanical Plant imeni Stalin), the turret lathe model 136 has been modernized by the installation of a special device with a separate motor of 0.36 kw and 1,440 rpm. This device accelerates the cross motion of the lathe and cuts the time needed for auxiliary operation. There is 1 diagram.

1. Lathes--Operation    2. Lathes--Equipment

Card 1/1

TAYTS, Ye.M., doktor tekhn. nauk; SHVARTS, S.A., kand. tekhn. nauk[deceased]; PEYSAKHzon, I.B., inzh.; GEL'FER, M.L., inzh.; DMITRIYENKO, M.T., inzh.; DORFMAN, G.A., inzh.; IZRAELIT, Ye.M., inzh.; KULAKOV, N.K., inzh.; KUSHLYANSKIY, B.S., inzh.; MEYKSON, L.V., inzh.[deceased]; LEONOV, A.S., inzh.; SHVARTS, G.A., inzh.; SHVARTSMAN, I.Ya., inzh.; YATSENKO, N.Ya., inzh.; BABIN, P.P., inzh.; KHANIN, I.M., doktor tekhn. nauk; prof., red.; KOZYREV, V.P., inzh., red., KUPELMAN, P.I., inzh., red.; LGALOV, K.I., inzh., red.; LEYTES, V.A., inzh., red.; LERNER, B.Z., inzh., red.; POTAPOV, A.G., inzh., red.; SHELKOV, A.K., red.

[By..product coke industry worker's handbook in six volumes]  
Spravochnik koksokhimika v shesti tomakh. Moskva, Metal..  
lurgija. Vol.2. 1965. 288 p. (MIRA 18:8)

MARTYNYUK, Arseniy Grigor'yevich, professor; GEL'FER, P. I., redaktor;  
LOKHMATYY, Ye. G., tekhnicheskiy redaktor

[Form and function of the kidney surviving unilateral nephrectomy]  
Sostoianie i funktsiya ostanovshiesya pochki. Kiev, Gos.med. izd-vo  
USSR, 1955. 87 p.

(KIDNEYS)

GEL'FER, P.I., professor (Kiev)

"Outlines of operative urology" by A.P.Tsulukidze. Reviewed by  
P.I.Gel'fer. Urologia 21 no.2:84-86 Ap-Je '56. (MIRA 9:12)  
(GENITOURINARY ORGANS--SURGERY)  
(TSULUKIDZE, A.P.)

GEL'FER, P.I., prof.; BLATNOY, Kh.P.

Modification of single-stage prostate adenomectomy with primary  
suture of the urinary bladder. Urologiia 24 no.4:33-36 J1-Ag '59.  
(MIRA 12:12)

1. Iz Kiyevskoy oblastnoy bol'nitsy (glavnnyy vrach A.M. Cherednik).  
(PROSTATIC HYPERTROPHY surgery)  
(BLADDER surgery)

KUDRIN, Leonid Nikolayevich, prof.; GEL'PER, P.I., red.; GITSHTETN,  
A.D., tekred.

[Urolithiasis] Nekokamennoia bolezn'. Kiev, Gos.med.izd-vo  
USSR, 1960. 287 p. (MIRA 13:12)  
(CALCULI, URINARY)

VEYMEROV, Isaak Borisovich, prof.; ROZHINSKIY, Lazar' Markovich;  
GEL'FER, P.I., red.; GITSHTEYN, A.D., tekhn. red.; CHUCHUPAK,  
V.D., tekhn. red.

[Diseases of the male urogenital organs; the lower section of  
the urogenital system] Bolezni mochepolovych organov u muzh-  
chin; nizhnii otdel mochepolovoi sistemy. Kiev, Gos. med.  
izd-vo USSR, 1961. 220 p. (MIRA 15:3)  
(GENITOURINARY ORGANS—DISEASES)

GEL'FER, P.I.

Hematuria in prostatic adenoma. Urologia 26 no.2:23-27 '61.  
(MIRA 14:3)  
(PROSTATE GLAND--TUMORS) (HEMATURIA)

GEL'FER, P.I. ....

"Pyelonephritis" by A.IA. Pytel', S.D. Goligorskii. Reviewed  
by P.I. Gel'fer. Urologiia no.1r90-92 '62. (MIRA 15:11)  
(KIDNEYS—DISEASES) (PYTEL', A.IA.) (GOLIGORSKII, S.D.)

GEL'FER, P.I., prof. (Kiev)

Current drugs used in urology. Urologia 27 no.4:66-70 Jl-Ag  
'62. (MIRA 15:11)

(UROLOGY) (DRUGS)

POLONSKIY, B.L., prof., red.; PROSKURA, O.V., dots., red.; ALAPIN, G.Ya., prof., red.; GEL'FER, P.I. (Kiev), red.; PINEVICH, M.V., dots., doktor med. nauk (Vinnitsa); TSYEUL'SKIY, L.Ye., red.; MARINSKAYA, A.L., tekhn. red.

[Transactions of the Ukrainian Conference of Urologists devoted to the 150th anniversary of N.I.Pirogov's birth, held June 27-29, 1960] Trudy Ukrainskoi respublikanskoi konferentsii urologov, posvyashchena 150-letiyu so dnia rozhdeniya N.I. Pirogova, 1960. Kiev, Gosmedizdat USSR, 1962. 386 p. (MIRA 16:3)

1. Ukrainskaya respublikanskaya konferentsiya urologov, posvyashchena 150-letiyu so dnya rozhdeniya N.I.Pirogova, 1960.
2. Glavnyy urolog Ministerstva zdravookhraneniya Ukr.SSR (for Proskura).

(UROLOGY--CONGRESSES)

ALAPIN, G.Ya., prof., red., (Khar'kov); GEL'FER, P.I., prof., red.; PINEVICH, M.V., dots., red.; POLONSKIY, B.L., prof., red.; PROSKURA, O.V., dots., red.; TSYBUL'SKIY, L.Ye., red.; NARINSKAYA, A.L., tekhn. red.

[Transactions of the Republic Conference of Urologists (dedicated to the 150th anniversary of N.I.Pirogov's birth)]  
Trudy Respublikanskoi konferentsii urologov (posviashchena 150-letiiu so dnia rozhdeniya N.I.Pirogova) 27-29 iiunia 1960. Gosmodizdat, USSR, 1962. 386 p. (MIRA 16:12)

1. Respublikanskaya konferentsiya urologov Ukrainskoy SSR, 1960.

(UROLOGY)

GEL'FER, P.I., prof.

Review of B.S. Gekhman's book "Nonspecific epididymitis." Vest.  
derm. i v en. 38 no. 9:82-83 S '64. (MIRA 18:4)

GEL'FER, P.I., prof. (Kiyev)

Current aspects of the treatment of urolithiasis;  
the so-called dissolution of stones. Urol. i nefr.  
no.2:64-71 '65. (MIRA 19:1)

REUTER, R. A.

RUBISOVA, L. K., GAMURO, R. L., EIOEL'SHTEIN, S. I., GEL'PER, R. A.

Penicillin inhalation therapy. Pediatriia, Moscow No. 6,  
Nov.-Dec. 50. p. 44-51

1. Of the Department of Pediatrics, Central Institute for the Advanced Training of Physicians (Head of Department--Prof. G. N. Speranskiy, Active Member of the Academy of Medical Sciences) attached to the Hospital imeni Dzorzhinskogo (Head Physician--Ye. L. Guterman) and of the Department of Experimental Therapy VNIP (Head of Department--Prof. Z. V. Yermol'yeva, Corresponding Member of the Academy of Medical Sciences).

CLM, 20, 3, March 1951

ZHURAKHOVSKIY, P., inzh.; GEL'FER, S., inzh.; GAYETSKIY, A., inzh.

Machine for cutting adhesive rubber. Avt.transp. 40 no.10:31  
O '62. (MIRA 15:11)  
(Cutting machines)

ZHURAKHOVSKIY, P.; GEL'FER, S.; GAYETSKIY, A.

Machine for inserting vulcanization devices. Avt.transp. 40  
no.4:53 Ap '62. (MIRA 15:4)  
(Vulcanization--Equipment and supplies)

ZHURAKHOVSKIY, P.N.; GEL'FER, S.; GAYETSKIY, A.

Glue spraying unit. Avt.transp. 4 no.8:52-53 Ag '62. (MIRA 16:4)  
(Gluing--Equipment and supplies)

GEL'FER, S.A.

Variation method in conformal mapping. Izv. AN Arm. SSR. Ser.  
fiz.-mat. nauk 14 no.3:17-24 '61. (MIRA 14:8)

1. Gor'kovskiy inzhenerno-stroitel'nyy institut imeni V.P.  
Chkalova.

(Conformal mapping)

ZHURAKHOVSKIY, R.; GAYETSKIY, A.; GEL'FER, S.

Tire-retreading line. Avt.transp. 4i no.4135-36 Ap '63.  
(MIRA 16:5)  
(Tires, Rubber--Retreading and recapping)

GELFER, S.A.

**Gelfer, S.** On the class of regular functions which do not take on any pair of values  $w$  and  $w_0$ . *Russ. Math. J. Mat. Sborik* [N.S.] 19(61), 33-45 (1946). (Russian; English summary)

The author considers the following two classes of functions: the class (C) of functions  $w = f(z) = \sum a_n z^n$  which are regular in  $|z| < 1$  and satisfy the condition that  $f(z_1) f(z_2) \neq 1$  for  $|z_1| < 1$ ,  $|z_2| < 1$ , the class (D) of functions  $w = \varphi(z) = 1 + \sum a_n z^n$  which are regular in  $|z| < 1$  and satisfy  $\varphi(z_1) \varphi(z_2) \neq 0$  for  $|z_1| < 1$ ,  $|z_2| < 1$ . If  $f$  belongs to (C), then  $(1 + f(z))/(1 - f(z))$  belongs to (D) conversely, if  $\varphi$  belongs to (D),  $(\varphi(z) - 1)/(\varphi(z) + 1)$  belongs to (C). The author finds inequalities for the moduli of the derivatives and their derivatives and applies these to the classes (C) and (D). The results obtained are properties of the functions  $w = f(z)$ .

*PL. C. Spencer* (Stanford University)

See: *Mathematical Reviews*, Vol. 18, No. 1

Gel'f'er, S. A.

USSR

1-F/W

Gel'f'er, S. A. On typically real functions of order  $p$ .  
Mat. Sb. N.S. 35(77), 193-214 (1954). (Russian)

Let  $T(p)$  denote the class of functions  $\sum_{n=1}^{\infty} a_n z^n$  which are regular in  $|z| < 1$ , have all coefficients real, and for which there is a  $p < 1$  such that  $\Im f(z)$  changes sign  $2p$  times on each circle  $|z| = r$ ,  $p < r < 1$ . The reviewer and Robertson [Trans. Amer. Math. Soc. 70, 127-136 (1951); MR 12, 691] proved that if  $f(z) \in T(p)$  then for each  $n > p$

$$(1) \quad |a_n| \leq \sum_{k=1}^p |a_k| \frac{2k(n+p)!}{(n^2 - k^2)(p+k)!(p-k)!(n-p-1)!}$$

and this inequality is sharp in all of the variables.

The author now gives a second proof of (1) which is somewhat longer than the original. It is proved that if  $f(z) \in T(p)$ , then it can be represented in the form

*Goodman, S. A.*

$$(2) \quad f(s) = \sum_{n=1}^{\infty} A^{(n)} \prod_{k=1}^n s(s, \cos \theta_k) + \prod_{n=1}^{\infty} s(s, \cos \theta_n) \int_0^s s(s, \cos \theta) d\mu(\theta).$$

where  $A^{(0)}, \dots, A^{(n-1)}$  are real,  $\mu(\theta)$  is a real non-decreasing function and  $s(s, x) = s/(1 - 2sx + s^2)$ . The class of functions given by the right side of (2) is wider than  $T(p)$ , so the bound (1) is now extended to this wider class.

*A. W. Goodman (Lexington, Ky.).*

Gelffer, S. A. On coefficients of typically real functions.  
Doklady Akad. Nauk SSSR (N.S.) 94, 373-376 (1954).

(Russian)

Let  $F(z) = \sum_{n=1}^{\infty} a_n z^n$  be typically-real in  $0 < |z| < 1$ . It is proved that (a) if  $a_1 - a_{-1} = 1$  then  $|a_n| \leq n$ ,  $n \geq 2$ , and (b) if instead  $a_{-1} = -1$  and  $F(z) \neq 0$  in  $|z| < 1$  then  $-2 \leq a_n \leq 2$ ,  $-1 \leq a_1 \leq 3$ , and

$$4 \min_{0 \leq \theta \leq \pi} \sin n\theta \sin \theta \leq a_n \leq 4 \max_{0 \leq \theta \leq \pi} \sin n\theta \sin \theta \quad \text{for } n \geq 2.$$

All the inequalities are sharp. In the proof of (b) the author uses a Stieltjes integral representation which he attributes to Goluzin, but which was proved earlier by M. S. Robertson [Bull. Amer. Math. Soc. 41, 565-572 (1935)]. The result (a) is partly contained in a more general theorem of Nehari and Schwarz [see the preceding review].

A. W. Goodman (Lexington, Ky.).

62

GOLFER, S. H.

USSR/Mathematics - Multi-leafed functions

Card 1/1 : Pub. 22 - 1/44

Authors : Golfer, S. A.

Title : Variations of multi-leafed functions

Periodical : Dok. AN SSSR 98/6, 885-888, October 21, 1954

Abstract : A method for obtaining the formulas of a variation of multi-leafed functions is described. The method consists in reducing all operations to the determination of the variation of a function which maps a circle on single-leafed region of a plane (Riemannian) with uniforming variable. The theorem presented gives all the necessary definitions. Two references (1943 and 1946).

Institution : Gorkiy Engineering-Constructional Institute im V. P. Chkalov

Presented by: Academician M. A. Lavren'ev, July 19, 1954.

GEL'FER, S.A.

SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/1 PG - 548  
AUTHOR GEL'FER S.A.  
FILE Variation method in the theory of the p-sheeted functions.  
PERIODICAL Uspechi mat. Nauk 11, 5, 60-66 (1956)  
reviewed 1/1957

Let  $F_p$  be the class of functions  $z = f(\zeta) = \sum_{n=1}^{\infty} c_n \zeta^n$ ,  $|\zeta| < 1$ , which map

the unit circle onto a region of the p-sheeted Riemannian surface.

Let  $F_p^g(a_1, \dots, a_m)$  be a function family of  $F_p$ . The functions belonging to it have the following properties: 1. they map the unit circle onto a region  $D$  of a Riemannian surface the genus of which is at most  $g$ . Here all functions which map the circle  $|\zeta| < 1$  onto regions of the same Riemannian surface, transfer the point  $\zeta = 0$  into the same point of the Riemannian surface which lies over  $z = 0$ . 2. In  $|\zeta| < 1$ ,  $f(\zeta)$  does not assume the values  $a_1, \dots, a_m$ .

The principal result of the paper is the following theorem: For given  $n \geq 1$  let  $|c_n|$  reach a maximum for the function  $\tilde{f}(\zeta) \in F_p^g(a_1, \dots, a_m)$ . Then  $\tilde{f}(\zeta)$  maps the unit circle  $|\zeta| < 1$  onto the whole Riemannian surface  $R$  which is cut along a finite number of analytic arcs. These intersections go through all points of  $R$ , which lie over  $z = a_1, \dots, a_m, \infty$ .

INSTITUTION: Gorkij.

GEL'FER S. A.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress\* (Cont.) Moscow  
Jun-Jul '56, Trudy '56, V. 1., Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.  
Gagayev, B. M. (Kazan'). Some Properties of Orthogonal  
Functions. 77

Gakhov, F. D. (Rostov-na-Donu). Krikunov, Yu. M. (Kazan').  
Topological Methods in the Theory of Function of a Complex  
Variable and Their Application for Solving Inverse  
Boundary Problems. 77-78

There is 1 reference, which is a translation into Russian.

Gel'fer, S. A. (Gor'kiy). On a Maximum Conformal Radius  
of the Fundamental Domain of a Given Group. 78

Mention is made of Lavrent'yev, M. A.

Geronimus, Ya. L. (Khar'kov). On Some Sufficient Convergence  
Conditions of the Fourier-Chebyshev Process. 78-79

Card 24/80

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Gelfer, S. A. On the coefficient problem for  $\rho$ -valent functions. (Dokl. Akad. Nauk SSSR 238 (1977), No. 4, 855-858) [Russian]

Let  $F_p^{\rho}(a_1, \dots, a_m)$  denote the class of functions  $f(z) = \sum_{n=1}^{\infty} a_n z^n$  which are regular in  $|z| < 1$  and map onto a region  $D$  lying in some  $\rho$ -sheeted analytic Riemann surface  $R$  of genus  $\rho \leq g$  and with  $a_1, a_2, \dots, a_m$  in  $\mathbb{C} \setminus \{0\}$ . Using variational formulas developed earlier by the author (same Dokl. 98 (1954), 663-667; Mat. Sb. 16 (1945), 103-116), he now proves that if  $f(z) \in F_p^{\rho}(a_1, \dots, a_m)$  has maximal  $|z|$ , then  $f(z)$  maps  $|z| < 1$  on the entire surface  $R$  except for a finite number of analytic arcs. A. W. Goodman

8/23/2000  
S. A. Gelfer

Gor'kovskiy inzhenerno-stritel'stvennyi institut imeni V. P. Chkalova.

GEL'FER, S. A.

20-2-2/62

AUTHOR: Gel'fer, S. A.  
 TITLE: On the Coefficients of the Typically Real Functions.  
 (O koeffitsiyentakh tipichno-veshchestvennykh funktsii)  
 PUBLICATION: Doklady Akad. Nauk SSSR, 1957, Vol. 115, Nr 2, pp. 211-215 (USSR)  
 ABSTRACT: A function  $f(z)$  is called typically real in the circle  $|z| < 1$ , when it is real in the case of a real  $z$  and when it satisfies in the other points of this circle the condition  $\operatorname{Im}(f(z)) \cdot \operatorname{Im}(z) > 0$ . To be a class of typically real functions  $f(z)$  which are regular in  $|z| < 1$  and satisfy the normalization conditions  $f(0)=0$ ,  $f'(0)=1$ . The present report examines the subclass  $T^{(2)}$  of the function  $f_2(z) \in T$ , for which  $f_2(z) = (1/i)f_2(iz) \in T$  applies. These functions satisfy the conditions  $\operatorname{Im}(f(z)) \cdot \operatorname{Im}(z) > 0$  and  $\operatorname{Re}(f_2(z)) \cdot \operatorname{Re}(z) > 0$  and all of them are odd. The author here puts down  $f_2(z) = z + x_1 z^3 + x_2 z^5 + \dots + x_n z^{2n+1} + \dots$ . This class  $T^{(2)}$  contains all odd one-sheet functions of the type  $f_2(z)$  with real coefficients. For the coefficients  $x_n$  the following exact estimations are known:  
 $|x_n| + |x_{n-1}| \leq 2$  ( $n=2, 3, \dots$ );  $-1 \leq x_1 \leq 1$ ,  $-1/2 \leq x_2 \leq 3/2$ . There exist no exact estimations of the individual coefficients  $x_n$  for  $n > 2$ . Then the following theorem is given: In the case of  $f_2(z) \in T^{(2)}$  the following applies:

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Gel'fer, S. A.

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AUTHOR: Gel'fer, S. A.

TITLE: On the Maximum of the Conformal Radius of the Fundamental Domain of a Double-Periodical Group (O maksimume konformnogo radiusa fundamental'noy oblasti dvojaka periodicheskoy gruppy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp.241-244 (USSR)

ABSTRACT: Be it assumed that  $\{D\}$  is a family of simply connected domains  $D$  of the plane  $w$ , which contain the point  $w = 0$  and possess the following properties: 1) The domain  $D$  contains no points that are congruent with respect to the group  $T$  of the transformations  $w' = w + n_1 \omega_1 + n_2 \omega_2$ . (Here  $\omega_1$  and  $\omega_2$  denote constants with nonreal relations;  $n_1$  and  $n_2$  denote any whole numbers). The domain  $D$  does not contain the assumed system of the finite points  $a_1, \dots, a_m$  and the points congruent with respect to the groups  $T$ . From all domains  $\{D\}$  that domain has to be determined here which has the highest conform radius. The class of the functions  $w = f(z) = \sum_{n=1}^{\infty} c_n z^n$ , which are regular in the circle

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'On the Maximum of the Conformal Radius of the Fundamental Domain of a Double-  
-Periodical Group

$|z| < 1$  and represent this circle one-leaved onto the domains  
of the family  $\{D\}$ , are denoted here by  $S(w_1, w_2)$ . This prob-  
lem is reduced here to the determination of the maximum  
 $|f'(0)| = |c_1|$  within the class  $S(w_1, w_2)$ . At first a rather  
voluminous theorem is given and proved. Also the theorems  
and conclusions resulting from this first theorem are given.  
There are 1 figure, and 5 Soviet references.

ASSOCIATION: Constructional Engineering Institute imeni V. P. Chkalov,  
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PRESENTED: November 29, 1956, by V. I. Smirnov, Academician

SUBMITTED: September 23, 1956

AVAILABLE: Library of Congress

Card 2/2

GEL'FER. S. A. Doc Phys-Math Sci -- (diss) "Extreme problems in the theory of multisheeted functions." Len, 1958. 17 pp (Len Order of Lenin State Univ im A. A. Zhdanov), 150 copies. Bibliography at end of text (12 titles).  
(KL, 11-58, 111)

-2-

AUTHOR: Gel'fer, S.A. (Gor'kiy)

39-44-2-4/10

TITLE: On the Maximum of the Conformal Radius of the Fundamental Domain of a Given Group (O maksimume konformnogo radiusa fundamental'noy oblasti dannoy gruppy)

PERIODICAL: Matematicheskiy Sbornik, 1958, Vol 44, Nr 2, pp 213-223 (USSR)

ABSTRACT: Let  $S_a(\omega_1, \omega_2)$  be the class of the functions

$$w = f(z) = \sum_{n=1}^{\infty} c_n z_n ,$$

which are regular in  $|z| < 1$  and which map this circle schlicht onto simply connected domains  $D$  which possess the following properties: Let  $T_n$  be the group of the transformations

$w' = w + n_1 \omega_1 + n_2 \omega_2$ , where  $\omega_1$  and  $\omega_2$  are constant,  $\frac{\omega_1}{\omega_2}$

not real, and  $n_1, n_2$  integer; then  $D$  contains no points which are congruent with regard to  $T_n$ , furthermore  $D$  does not contain the points  $a_1, \dots, a_m$  and those which are congruent to them with regard to  $T_n$ , and finally  $D$  contains the zero point.

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Theorem 1: If for  $w = f(z) \in S_a(\omega_1, \omega_2)$  the functional  $|f'(0)|$  attains a maximum, then  $w$  satisfies the differential equation

$$\frac{1}{z^2 w''} = A_0 + \sum_{i=1}^m A_i \zeta(w-a_i) + A_{m+1} \zeta(w) + \phi(w),$$

where  $A_i$  are constants,  $\sum_{i=1}^{m+1} A_i = 0$ , and  $\zeta$  and  $\phi$  are the Weierstrasz  $\zeta$  and  $\phi$ -functions. Furthermore  $f(z)$  maps the unit circle onto a domain  $D$  with the following properties:

- 1.)  $D$  contains  $w = 0$ , it is the simply connected fundamental domain  $S_0$  of the group  $T_n$  with sections. The boundary of  $D$  consists of a finite number of analytic arcs which are mutually congruent with regard to  $T_n$ , and of piecewise analytic sections which connect the boundary with the points  $a_i$  ( $i=1, \dots, m$ ).
- 2.) To each pair of congruent curves of the boundary  $S_0$  and to the simple curves of the sections there correspond two curves of equal length on  $|z| = 1$ .

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On the Maximum of the Conformal Radius of the Fundamental Domain of a Given Group

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Theorem 2: The domain  $D$  with the properties 1 and 2 of theorem 1 is uniquely determined.

The theorems are needed for the determination of that domain  $D$  which possesses the greatest conformal radius, a problem which can be considered as a generalization of the well-known theorem of Koebe and of an investigation of Lavrent'ev [Ref 1]. Several special cases are considered. There are 2 figures and 4 Soviet references.

SUBMITTED: October 29, 1956

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1. Conformal mapping 2. Differential equations

Card 3/3

16(1)

AUTHOR: Gel'fer, S.A.

30V/20-126-3-1/69

TITLE: On the Maximum Conformal Radius of the Fundamental Region for  
the Group of Fractional Linear Transformations

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 463-466 (USSR)

ABSTRACT: Let  $\{T\}$  be the proper discontinuous group of the fractional linear transformations  $T$ . Let  $\{D\}$  be a family of simply connected domains  $D$  of the  $w$ -plane with the following properties: 1)  $D$  contains no points congruent with respect to  $\{T\}$ ; 2)  $D$  does not contain the given point system  $a_1, \dots, a_m, \infty$  and the points congruent to this point with respect to  $\{T\}$ ; 3)  $D$  contains the point  $c$ , which is different from the fixed points and the cyclic points of the group transformations. Let  $S_a(T)$  be the class offunctions  $w = f(z) = \sum_{n=0}^{\infty} c_n z^n$  which are regular in  $|z| < 1$  andwhich map conformally the circle  $|z| < 1$  onto the domains  $\{D\}$ .Theorem: If the functional  $|f'(0)|$  gets a maximum by the function  $f(z) \in S_a(T)$ , then the function maps the circle  $|z| < 1$ onto a domain  $D$  with the following properties: 1.  $D$  contains  $c_0$  and is a simply connected fundamental domain  $S_0$  of the group  $\{T\}$ 

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On the Maximum Conformal Radius of the Fundamental Region for the Group of Fractional Linear Transformations SOV/20-126-3-1/69

with cuts. The boundary of  $D$  consists of finitely many analytic arcs pairwise congruent with respect to  $\{\infty\}$ , and of piecewise analytic cuts beginning at the boundary of  $S_0$  and ending in the points  $a_1, \dots, a_m$  or in points congruent with them. 2. To every pair of congruent arcs of the boundary of  $S_0$  and to the simple arcs of the cuts on  $|z|=1$  for the mapping  $w = f(z)$  there correspond two arcs of the same length. 3. For the given group  $D$  is determined uniquely.

There follow several examples for the application of the theorem for the determination of domains with a maximal conformal radius with respect to  $c_0$ .

The author mentions G.N.Goluzin, and M.A.Lavrent'yev.

There are 6 Soviet references.

ASSOCIATION: Gor'kovskiy inzhenerno-stroitel'nyy institut imeni V.P.Chkalova  
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PRESENTED: February 9, 1959, by V.I.Smirnov, Academician

SUBMITTED: February 2, 1959

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85944

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S/039/60/052/001/006/009 XX  
C111/C222AUTHOR: Gel'fer, S.A. (Gor'kiy)TITLE: On the Maximum of the Conformal Radius of the Fundamental Region  
of the Group of Fractional-Linear Transformations 16

PERIODICAL: Matematicheskiy sbornik, 1960, Vol. 52, No. 1, pp. 629-640

TEXT: Let  $\{T\}$  be a properly discontinuous group of fractional-linear transformations and  $a_1, \dots, a_n$  be a system of points in the fundamental region of the group. Let  $\{D\}$  be a family of simply connected regions of the  $w$ -plane with the properties:

1)  $D$  contains no points congruent with respect to  $\{T\}$ ;  
2)  $D$  does not contain the points  $a_1, \dots, a_m, \infty$  and the points congruent to them with respect to  $\{T\}$ ;  
3)  $D$  contains a fixed point  $c_0$  different from the fixed points and the cyclic points of the transformations of the group.

Problem: Among all  $D$  of the family  $\{D\}$ , that region shall be determined which has the greatest conformal radius with respect to  $c_0$ .

Let  $S_a(T)$  be the class of functions

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On the Maximum of the Conformal Radius of the S/039/60/052/001/006/009 XX  
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$$(1) \quad w = f(z) = \sum_{n=0}^{\infty} c_n z^n$$

regular within the circle  $|z| < 1$  and mapping this circle onto the regions of the family  $\{D\}$ . The given problem is reduced to the determination of the maximum of  $|f'(0)|$  in the class  $S_a(T)$ .  
Theorem 1 : If the functional  $|f'(0)|$  has its maximum for  $w = f(z) \in S_a(T)$  then  $f$  maps the circle  $|z| < 1$  onto a region  $D$  with the following properties:

1)  $D$  contains  $w = c_0$  and is a simply connected fundamental region  $S_0$  of the group  $\{T\}$  with cuts. The boundary of  $D$  consists of finitely many analytic arcs being pairwise congruent with respect to  $\{T\}$ , and of piecewise analytic cuts beginning on the boundary of  $S_0$  and ending in the points  $a_1, \dots, a_m$  or in congruent points. 2) To every pair of congruent arcs of the boundary of  $S_0$  and to the simple arcs of the cuts there

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On the Maximum of the Conformal Radius of the S/039/60/052/001/006/009XX  
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 Linear Transformations

there correspond two arcs of the same length on  $|z| = 1$  in consequence of  $w = f(z)$ .

Theorem 2 : The region D with the properties 1) and 2) of theorem 1 is unique.

Several exceptional cases are considered : 1)  $\{T\}$  consists of the transformations

$$w' = \frac{aw+b}{cw+d}, \quad ad - bc = 1, \quad a, b, c, d - \text{real, integral}; \quad 2) \text{ as}$$

1) and besides  $b = 2b'$ ,  $c = 2c'$ ,  $b'$ ,  $c'$  - integral ; 3)  $\{T\}$  consists of

$$w' = \frac{aw+\bar{c}}{cw+\bar{a}}, \quad a\bar{a} - c\bar{c} = 1, \quad a \text{ and } c - \text{complex integers. In all three cases}$$

the inverse function  $z = \varphi(w)$  of the extremal function is given explicitly ; the given formulas can be obtained from the general results of M.A. Lavrent'ev (Ref. 2). Finally, as a more complicated special case, the author considers groups whose fundamental regions are mappings of Riemannian surfaces (in this case there exists no simple automorphic

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Linear Transformations <sup>85944</sup> S/039/60/052/001/006/009 XX  
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function having only one simple pole in the fundamental region.)  
The author mentions G.M. Goluzin and I.Ye. Bazilevich.  
There are 7 references : 6 Soviet and 1 English. X

SUBMITTED: January 14, 1959

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S/044/62/000/007/013/100  
C111/C333

AUTHOR: Gel'fer, S. A.

TITLE: Some extremal properties of multi-valent conformal mappings

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1962, 27-28,  
abstract 7B135. ("Issled. po sovrem. probl. teorii funktsiy.  
kompleksn. peremennogo." M., Fizmatgiz, 1961, 351-359)

TEXT: Let  $E$  be the unit circle  $|z| < 1$ ; let  $K_z(r_0, R_0) \equiv K$  be  
the circular ring  $r_0 < |z| < R_0$ ,  $r_0 < 1 < R_0$ ; let  $z_0$  be a fixed point  
of  $E$  or  $K$ ;  $p \geq 1$ ,  $g \geq 0$ -integers;  $\lambda$  -- real number. Let  $R_p^{(g)}$  denote a  
closed Riemann surface with  $p$  sheets and genus  $g$ . The author gives a  
qualitative solution of the following extremal problem: The maximum of  
the functional

$$i_f = \operatorname{Re} \{ e^{i\lambda} f(z_0) \} \quad (1)$$

is determined, if  $f(z)$  varies in the class  $F_p^g$  in  $E$  or the class

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Some extremal properties of . . .

$F_p \left( \frac{r_0}{R_0}, \frac{1}{p_1} \right) = F_p$  in  $K$ . Here  $F_p^G$  is the class of regular functions  $w = f(z) = z + c_2 z^2 + \dots + c_n z^n + \dots$  ( $f(z) \neq 0$  for  $z \neq 0$  in  $E$ , which map  $E$  one-to-one on the domain  $D$ ; the domains  $D$  lie on  $R_p^{(G)}$  and  $z = 0$  is thereby mapped on a fixed point  $0$  of  $R_p^{(G)}$  situated above  $w = 0$ .  $\checkmark$

Analogously, under the class

$F_p \left( \frac{r_0}{R_0}, \frac{1}{p_1} \right) = F_p$  the author understands the class of regular functions  $w = f(z)$ ,  $f(z) \neq 0$  in  $K$ , which map  $K$  one-to-one on twofold connected domains  $D$  on  $R_p^{(0)}$ , whereby  $z = 1$  is mapped on a fixed point  $P_1$  of  $R_p^{(0)}$  situated above the point  $w = 1$ . Both classes are normal in  $E$  and  $K$ , respectively, this guarantees the existence of extremal mapping functions of the extremal problem being considered in the same class.

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C111/C333

Some extremal properties of . . .

To solve the given problem the author extends the variation method by G. M. Goluzin (Goluzin, G. M., Geometricheskaya teoriya funktsiy kompleksnogo peremennogo [Geometric function theory] M.-L., 1952) to the mentioned function classes by constructing the corresponding variation formulas for these classes. The application of these variation formulas to the extremal problem being examined leads to differential equations in  $E$  and  $K$ , respectively, for the sought extremal mapping functions, thereby permitting the character of the mappings effected by these functions to be clarified. The following theorems result:

Theorem 1.1: The function  $f(z) \in F_p^E$ , for which (1) attains a maximum, maps the circle  $|z| < 1$  on the whole surface  $R_p^{(E)}$  with one cut consisting of a finite number of analytical arcs. These arcs contain all points of  $R_p^{(E)}$  which are situated over the points  $w = 0$  and  $w = \infty$  of the  $w$ -plane with the exception of the point 0.

Theorem 2.1: The function  $f(z) \in F_p$  for which (1) attains a maximum maps  $K$  on a domain  $D$  which originates from  $R_p^{(0)}$  with the help of two

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Some extremal properties of . . .

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cuts consisting of a finite number of analytical arcs. These arcs contain all points of  $R_p^{(0)}$  which are situated over the points  $w = 0$  and  $w = \infty$  of the  $w$ -plane.

Further, a differential equation is obtained for the case  $z \in E$ ,  $f \in F_p^E$ , the integral curves of which are analytical arcs which form the boundary cuts of the extremal domain from theorem 1.1.

[Abstracter's note: Complete translation.]

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S/020/62/142/003/001/027  
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16.1000

AUTHOR: Gel'fer, S.A.TITLE: Extension of the Goluzin-Schiffer variational method to  
multiply connected regions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, 503-506

TEXT: Let the  $n$ -fold connected domain  $D$  be the ring  $1 < |z| < R$  with  $n - 2$  circular holes. The class  $F$  is assumed to consist of the functions  $w = f(z)$ ,  $f(z) \neq 0$  regular and schlicht in  $D$  for  $z \in D$ ,  $f(z_0) = 1$  for a fixed  $z_0 \in (1, R)$  with the property that, if the curve  $l_1 \subset D$  is contained in the curve  $l_2 \subset D$ ,  $f|_{l_1}$  is contained in  $f|_{l_2}$ . Let  $\phi[f]$  be a real functional defined for all analytic functions in  $D$  which satisfies the relation

$$\phi[f + \varepsilon g] = \phi[f] + \operatorname{Re}\{\varepsilon \psi[f, g]\} + O(\varepsilon^2) \quad (1)$$

from M. Schiffer (Ref. 1: Proc. Internat. Congr. Math., 1958, Cambridge, 1960), where  $\psi[f, g]$  is a linear complex functional in  $g(z)$ . X

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Extension of the Goluzin-Schiffer ...

The following problem is considered : Determine the functions of class  $\mathcal{F}$  for which  $\Phi[f]$  becomes maximum.

In order to solve the problem the author goes back to a result of V.D. Yerokhin (Ref. 2 : DAN, 120, no. 4, 689 (1953); 127, no. 6, 1155 (1959)) and represents the sought extremum function in the form

$$f(z) = f_n f_{n-1} \dots f_1(z), \quad z \in D, \quad (2)$$

where  $f_1, f_2, \dots, f_n$  are unique and conformal in the domains  $D(L_1), f_1 D(f_1 L_2), \dots, f_{n-1} f_n D(f_{n-1} \dots f_1 L_n)$ ; here  $D(L)$  is a simply connected domain containing  $D$  and having the boundary  $L$ ;  $L_1: |z| < 1$ ,  $L_n: |z| < R$ ;  $L_2, \dots, L_{n-1}$  the other  $n - 2$  circles of the boundary of  $D$ . The component  $t_1 = f_1(z)$  is chosen such that the conditions  $f_1(\infty) = \infty$ ,  $f_1(z) \neq 0$ ,  $f_1(z_0) = t_1^0$  are satisfied, where  $t_1^0$  is determined from  $f_n f_{n-1} \dots f_2(t_1^0) = 1$ . Then the variation formula of G.M. Goluzin

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